

## Computer Science

### CS 102 Introduction to Computing with HTML

#### 3.0 units

Acceptable for credit: Transfer to UC, CSU

Advisories: CBOT 100 - Keyboarding

A general education course dealing with how computers work, how they are used and their effects on society. Includes an introduction to web-page design using HTML. (Fall, Spring) (Letter Grade Only)

### CS 111 Fundamentals of Programming 1

#### 4.0 units

Acceptable for credit: Transfer to UC, CSU

C-ID Course Number: COMP 122

Advisories: CS 102 - Introduction to Computing with HTML

Prerequisite: MATH 331 - Algebra 2

Basic principles of algorithmic problem solving and programming using methods of top-down design, stepwise refinement and procedural abstraction. Basic control structures, data types, and input/output. Introduction to the software development process: design, implementation, testing and documentation. The syntax and semantics of a modern programming language. (Summer) (Letter Grade Only)

### CS 112 Fundamentals of Programming 2

#### 4.0 units

Acceptable for credit: Transfer to UC, CSU

C-ID Course Number: COMP 132

Prerequisite: CS 111 - Fundamentals of Programming 1

Design, implementation, and testing of object-oriented software. Introduction to classes, objects, encapsulation, interfaces, inheritance, polymorphism, algorithms (sort, search, recursion), abstract data types (list, stacks, queues, trees), data structures, pointers, dynamic allocation, traversal using iterators, file I/O, and exceptions. Students will develop applications using class hierarchies and abstract data types. (Fall) (Letter Grade Only)

### CS 131 Computer Organization

#### 3.0 units

Acceptable for credit: Transfer to UC, CSU

C-ID Course Number: COMP 142

Prerequisite: CS 111 - Fundamentals of Programming 1

Introduction to computer architecture and assembly language programming. Topics include data representation and conversion, assembly language programming, digital design, and basic processor architecture. (Fall, Spring) (Letter Grade Only)

### CS 161 Discrete Structures

#### 3.0 units

Acceptable for credit: Transfer to UC, CSU

C-ID Course Number: COMP 152

Prerequisite: CS 111 - Fundamentals of Programming 1

An introduction to the discrete structures of computing, including propositional and predicate logic, methods of proof, functions, computer arithmetic, algorithm complexity, recursion, graphs, trees, sets and relations, networks, induction, and combinatorics. (Fall, Spring) (Letter Grade Only)

### CS 181 Game Programming

#### 3.0 units

Acceptable for credit: Transfer to UC, CSU

Advisories: CS 112 - Fundamentals of Programming 2

Prerequisite: CS 111 - Fundamentals of Programming 1

Elements of games, including theme, game play, and presentation. Basic concepts of programming and how programs control the display of graphics and animation in computer games. The use of sound and artificial intelligence in computer games. Demonstrations and experiments with game programming through the use of examples. (Fall, Spring) (Letter Grade Only)

### CS 189 Independent Projects

#### 1.0 - 3.0 units

Acceptable for credit: Transfer CSU

Courses for students capable of independent work who demonstrate the need or desire for additional study beyond the regular curriculum. Enrollment allows students to pursue activities such as directed field experience, research, or development of skills and competencies under faculty advisement and supervision. Independent projects may be earned in most disciplines. Students wishing to enroll in Independent Projects should contact the appropriate instructor identified in the class schedule. If the project proposed is acceptable to that instructor, a contract will be developed. All contracts for these classes must be completed and submitted to the Records Office no later than the end of the second week of the semester. Students may enroll for any combination (unit value) of Independent Projects 189 and/or 389 for a total of four semesters in a specific discipline. Units are awarded depending upon satisfactory performance and the amount of time committed by the student to the course. Allowable units vary according to discipline, and are based on the following formula: 1 unit - 48 hours per semester 2 units - 96 hours per semester 3 units - 144 hours per semester (Letter Grade Only)